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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,734	11/03/2005	Yuichi Nakada	123992	2149

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OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER	
KNABLE, GEOFFREY L	
ART UNIT	PAPER NUMBER
1791	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/535,734	NAKADA ET AL.	
	Examiner	Art Unit	
	Geoffrey L. Knable	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/20/05; 1/24/06; 5/24/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Throughout the specification and claims (esp. claims 1, 9, 11 and 12), reference is made to various processing occurring at a “tact time” or a time corresponding to “each tact” - it however is not clear what is meant by the term “tact” in this context, this rendering it difficult to understand and practice the invention without an undue burden of experimentation and/or speculation. Although present throughout the specification, an exemplary and particularly confusing discussion in this regard is found at paragraphs [0075]-[0078] on pages 16-17 of the specification. This therefore represents subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 10 defines a process of apparently improving the uniformity of the tire, this process involving preparing an "estimate equation” and then a “back calculation of said estimate equation”. The original disclosure does not however provide any more detailed description of how this estimate equation is prepared or used, this therefore being considered to represent subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention without an undue

burden of experimentation. Note that the only mention of this estimate equation in the specification is essentially repeating of the claim 10 language in the summary disclosure. No further detail or explanation is provided.

2. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 2-6, it is not entirely clear if the processing steps defined in these lines (e.g. moving a tire between stations in a molding systems having plural working stations, etc.) are positive requirements of the claimed process or whether this language is merely part of the preamble and not intended to define actual required processing. It would seem that the processing defined in lines 1-6 are required process steps in the claimed method (and have been so interpreted for purposes of this office action) but clarification is required of exactly what steps define the claimed method to avoid any ambiguity in assessing the scope of protection afforded by these claims.

In claim 1, line 6, as already noted, it is not clear what is meant by a "tact" time, this also rendering the scope of the claim indefinite. Essentially this same ambiguity is present in claims 9, 11 and 12 which also use the term "tact" in various ways.

In claim 1, lines 6-7, it is not clear what is ""to be performed at one or more working stations".

In claim 1, lines 8-10, reference is made to "molding a green tire" (i.e. singular) in a molding sequence, including a combination of green tires in different sizes in tandem. It however is not clear exactly what this is requiring in terms of how many tires are being

built within the context of the claim. In other words, is this requiring that plural different tires be built or only a single tire? Further, it is not clear whether the “molding sequence” refers to the sequence of the molding stations in building a (single) tire (e.g. note the only previous reference to a sequence in the claim is the “sequential" movement between stations in assembling the tire at lines 3 and 4) or a sequence of different tires overall being or to be built. Clarification is required of the scope of the claim in this regard.

In claim 1, lines 11-13 refer to disposing the carcass and bead cores on a "toroidal drum" but this is apparently followed by “toroidally extending” the carcass (corresponding to the inflating “to toroidal shape” described with reference to fig. 5). As such, it would seem that the drum is not in its “toroidal” shape when the (cylindrical) carcass band is disposed thereon. As the claim language seems to require the contrary (i.e. that the carcass is disposed on a “toroidal” drum), an ambiguity is raised.

In claim 3, line 2, the antecedent for “said working station” is ambiguous as plural station were previously defined.

In claim 10, in addition to the ambiguities created by the already described lack of any detailed description of how this estimate equation is prepared and used, it is also not clear if this claim is positively requiring molding (building) of an additional tire - note that lines 9+ use the language “in molding a tire of the same size …thereafter…” It is not clear if this is requiring positive steps of molding this additional tire.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3-5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Okada et al. (US 2001/0002608).

Okada et al. discloses a method of making tires in plural sizes in a desired sequence (e.g. paragraph [0070] suggest a specified order) in which a tire being built is moved between stations (e.g. fig. 1) for sequential assembly and in which a carcass and bead cores are disposed on a shaping drum (24) where the beads are locked, the carcass toroidally extended between the beads and the side portions of the carcass turned up around the beads (figs. 6(a)-6(b)). Tire components such as the belt/tread

(150) are also assembled while the bead cores are locked. Unlocking of the beads and removal of the green tire is implicit. A method as required by claim 1 is therefore anticipated. As to claims 3-5, tire components formed from spirally wound ribbons (e.g. figs. 4-5) and adjoined cut narrow pieces (100-106 in fig. 1) are suggested. As to claim 7, e.g. note fig. 4(a). As to claim 8, the member elements (106) are combined prior to assembly on the drum.

7. Claims 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okada et al. (US 2001/0002608).

Because of the ambiguities already noted, it is difficult to ascertain exactly what these claims are requiring. Okada et al. does however suggest that the process provides improved production efficiency with for example no waiting for vulcanization and no lost (or "idle") time for switchover of sizes (e.g. paragraph [0069]-[0072]). Such would seem to suggest or render obvious the requirements of claims 9 and 11. As to claim 12, inspection of vulcanized tires is considered implicit or certainly obvious in any tire building process.

8. Claims 1, 3-5, 7-9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 448,407 to Yamakawa et al. taken in view of Okada et al. (US 2001/0002608).

EP '407 discloses a method of making tires in plural sizes in a desired sequence (col. 5, lines 1+) in which a tire being built is moved between stations (e.g. figs. 1 and 3) for sequential assembly and in which a carcass and bead cores are disposed on a

shaping drum (at green tire building machine "7") where the carcass is toroidally extended between the beads and assembled with the belt and tread (e.g. figs. 2A-2E and col. 4, lines 16+). Specific details of the drums are not provided, and thus bead locking or turn-up are not specifically suggested, although it is clear from for example fig. 2A-2E that the carcass band is initially designed to be formed cylindrically and then toroidally shaped for joining with the belt/tread, as typical.

To effect bead locking during toroidal shaping would have been obvious to the ordinary artisan as such is well known and typical in this art when a carcass band/beads is to be toroidally shaped - Okada et al. (note locked bead in esp. fig. 6) is exemplary. As well known, such bead locking is typically provided and necessary to control the bead location and spacing during the toroidal shaping, it being submitted that such would have likewise been understood as necessary and obvious when effecting the toroidal shaping in the EP '407 process. Effecting turn-up of the carcass in this configuration would likewise have been an obvious building technique in view of Okada et al. (fig. 6) for only the expected and predictable results. A process as required by claim 1 would therefore have been obvious.

As to claims 3-5, 7 and 8, EP '407 does not provide specifics of the structure or application of the various components at the various stations. To spirally wind and/or assemble narrow strips would however have been obvious in view of Okada et al. which suggests such techniques provide an ability to quickly change the specification of the tire being built - note also the more detailed description of this reference disclosure in this regard above. As to claims 9, 11 and 12, because of the ambiguities already noted,

it is difficult to ascertain exactly what these claims are requiring. EP '407 does however suggest that the goal of the process is to provide improved production efficiency in the building of plural tire sizes. Okada et al. likewise is directed to further improving the building of different tires in a building line, this also desirably with for example no waiting for vulcanization and no lost/idle time for switchover of sizes (e.g. paragraph [0069]-[0072]). Such would seem to suggest or render obvious the requirements of claims 9 and 11. As to claim 12, inspection of vulcanized tires is considered implicit or certainly obvious in any tire building process.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US 2001/0002608) or [EP 448,407 to Yamakawa et al. taken in view of Okada et al. (US 2001/0002608)] as applied to claim 1 above, and further in view of at least one of [Akiyama (US 6,475,319) and Ikeda et al. (US 2002/0074077)].

As to claim 2, Okada et al. forms the carcass band, and inner liner, on cylindrical drum (14) and then removes the band from this drum. EP '407 likewise would suggest cylindrical formation/removal of the carcass band (figs. 1 and 2A). Further, the belt and tread of Okada et al. are assembled after rolling up the side portion of the carcass (fig. 6(b)). However, the sidewall is apparently folded with the carcass and therefore would not seem to suggest assembling the sidewall after the rolling up of the carcass. It however is well known in this art to be suitable and effective to effect the assembly of the sidewall with the carcass after effecting the rolling or turn-up of the carcass around the bead - Akiyama (e.g. fig. 9) and Ikeda et al. (e.g. figs. 4a-4c) are exemplary. To apply the sidewall after turn-up of the carcass would therefore have been obvious.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US 2001/0002608) or [EP 448,407 to Yamakawa et al. taken in view of Okada et al. (US 2001/0002608)] as applied above, and further in view of Senbokuya et al. (US 6,616,783).

As to claim 6, Okada et al. teaches spirally winding a ribbon to form the tread and sidewall (141) and forms the belt from assembled narrow cut strips (106). To also form the carcass and innerliner from assembled narrow cut pieces would likewise have been obvious in view of Senbokuya et al. which suggest such a process (e.g. fig. 1) provides a high quality and low cost carcass and inner liner forming process.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Geoffrey L. Knable/
Primary Examiner, Art Unit 1791

G. Knable
June 3, 2008